CLAIMS

1. A method for the protected management of a unit counter in an electrically erasable and programmable memory, according to which the number of units consumed by users is recorded by means of a counter, characterised in that it consists in breaking down the unit counter into at least two memory areas (A, B), a first area (A) in which at least one bit is stored per at least one consumed unit and a second area (B) in which the value corresponding to the total units consumed is stored, the second area being updated only when the number of units consumed exceeds or attains the number of not stored bits of the first area (A).

2. A method of managing a counter according to Claim 1, characterised in that the units consumed are recorded in the first area (A) cyclically.

3. A management method according to Claims 1 and 2, characterised in that an operation of recording n units consumed comprises the following steps:

- reading the content of the first area (A) and comparing the number of not stored bits (L) in the first area (A) with the number of consumed units (n) to be recorded,

- if this number of not stored bits (L) is greater than or equal to the number of units (n) to be recorded, the bits (n) to be recorded are stored in the said first area (A),

- if this number (L) is less, L bits are stored in the first area (A) and the (n-L) remaining units are recorded in the second area (B) by performing an

operation of updating this area, and the first area (A) is erased.

4. A management method according to any one of Claims 1 to 4, characterised in that an operation of updating the second area (B) comprises a step of writing in this second area a new coded counter value equal to the current value to which the number of stored bits in the first area (A) and the (n-L) remaining consumed units to be stored are added.

5. A management method according to Claim 4, characterised in that the updating comprises a prior step of recording indicator information (C2) signifying that an updating is currently being carried out.

6. A management method according to any one of the preceding claims, characterised in that the unit counter has an area (SB) for backing up the second area (B) and in that these two areas each have a field for recording a redundancy code (CR, SCR), for checking the integrity of the content of these two areas.

7. A management method according to Claims 4 and 5, characterised in that an operation of recording n units consumed also comprises a prior step of verifying the state of the counter comprising the following operations:

- verifying the absence of the indicator information for a current update:

- where the indicator information is indeed absent:

- verification of the validity of the fields containing the redundancy codes:

. where the fields are valid:

- recording of the n units;

. where the fields are not valid:

- detection of a fault and stoppage of the counter,

- where the indicator information is present:

- activation of the recovery operation to re-establish the integrity of the contents of the counter.

8. A management method according to Claims 6 and 7, characterised in that an operation of updating the second area (B) then includes the following steps:

- recording the indicator information (C2),

- copying, in the backup area (SB), the coded value (V0) of the counter of the second area (B),

- recording the new coded value of the counter in the second area (B),

- erasing the indicator information (C2).

9. A management method according to Claim 8, characterised in that the recovery operation consists in determining at which step the abnormality occurred, and then performing, according to the circumstances determined, the steps of updating the backup area (SB) and/or of the second area (B) and/or of the first area (A).

10. A management method according to Claim 9, characterised in that the determination of the step at which the abnormality occurred consists in reading the content of each of the areas in order to determine whether the abnormality occurred during the updating of the backup area (SB), case 1, during the updating of

the second area (B), case 2, during the erasure of the first area (A), case 3, between the updating of the second area (B) and the backup area (SB), case 4, or after the updating of these two areas, case 5,

. in case 1 in:

- copying the value contained in the second area (B) into the backup area (SB),

- updating the second area (B) by recording the new value which is equal to the old one to which the content of the first area (A) is added,

- erasing the first area (A),

- erasing the indicator information (C2);

. in case 2 in:

- copying into the second area (B) the value contained in the backup area (SB) by adding the value contained in the first area (A),

- erasing the first area (A),

- erasing the indicator information (C2);

. in case 3 in:

- erasing the content of the first area (A),

- erasing the indicator information (C2);

. in case 4 in:

- implementing the steps according to case 2;

. in case 5 in:

- implementing the steps according to case 3.

11. A management method according to any one of the preceding claims, characterised in that it comprises the step of recording information signifying a failure (C1) in reading or writing to the first area (A) deactivating the said area when it has not been

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possible to read or write in this area, and a step of reading this information at each new cycle, the units consumed then being directly recorded in a coded manner by an operation of updating the second area (B).

12. A management method according to Claim 5 and Claim 11, characterised in that the information (C2) indicating a current updating and the information signifying a failure (C1) in reading and writing to the first area are recorded in a third area (C) of the said counter.

13. A security module (SM) implementing the method according to any one of the preceding claims.

14. A security module according to Claim 13, characterised in that it is installed in a terminal managing the consumed units, notably a telephony terminal.

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